

RESPONSE TO OFFICE ACTION MAILED OCTOBER 11, 2005
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REMARKS

The present response is intended to be fully responsive to the rejection raised in the Office Action, and is believed to place the application in condition for allowance. Further, the Applicants do not acquiesce to any portion of the Office Action not particularly addressed. Favorable reconsideration and allowance of the application is respectfully requested.

In the Office Action, the Office noted that claims 1-4, 6-14 and 16-24 are pending, and that claims 1-5, 9-14 and 19-24 are rejected. The Office objected to claims 6-8 and 16-18.

In view of the above amendments and the following discussion, the Applicants submit that none of the claims now pending in the application are anticipated under the provisions of 35 U.S.C. §102 or obvious under the provisions of 35 U.S.C. §103. Thus, Applicants believe that all of these claims are now in condition for allowance.

I. OBJECTIONS

The Office objected to dependent claims 6-8 and 16-18 as being dependent upon a rejected base claim, but allowable if rewritten in independent form and including all of the elements of their independent claims and their intervening claims, if any. The Applicants thank the Office for indicating allowable subject matter, but nonetheless submit, for the reasons set forth below, independent claims 1 and 11 are allowable over the prior art of record. Thus, the Applicants submit that the dependent claims 6-8 and 16-18 are allowable, and in turn, request that the objection to such claims be withdrawn.

With respect to the other objection to dependent claims 6 and 16 for lack of antecedent basis, the Applicants note that the informalities resulted from a typographical error associated with changing their dependencies in the Applicants' last response. That is, the informalities resulted from changing dependent claims 6 and 16 to now depend from claims 1 and 11, respectively, instead of depending from cancelled claims 5 and 15, respectively.

To correct the informalities, the terms "estimating step" in dependent claims 6 and 16 have been replaced with "computing an initial position of the satellite signal receiver" to coincide with the terms set forth in the independent claims 1 and 11, respectively. As such, the Applicants request the Office to withdraw the objection

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and reconsider the dependent claims 6 and 16 with the rest of the pending claims in this application.

In addition, the Applicants submit that no new matter has been added by way of the above amendment. The Applicants also submit that, for the reasons set forth below, independent claim 1 and 11 are allowable over the prior art of record, and thus, the dependent claims 6 and 16 are likewise allowable.

II. REJECTIONS

A. Response to §102(e) Rejection of Claims 1-3

The Office rejected claims 1-3 under 35 U.S.C. § 102(e) as being anticipated by U.S. patent No. 6,650,282 granted to Martikka ("Martikka"). The Applicants respectfully traverse this rejection.

As set forth in the Office Action, the Office contended that *Martikka* teaches all the elements of each of the claims 1-3, including the elements directed to (i) forming Doppler residuals using the initial position and the Doppler measurements for each of the plurality of satellite signals, and (ii) relating the Doppler residuals to a change in the initial position. As such, the Office contended that *Martikka* teaches the claimed elements directed to forming Doppler residuals not from Doppler shifts of a satellite signal (i.e., a change in the satellite signal that results from the relative movement between a satellite and a receiver), and relating such Doppler residuals (i.e., not "Doppler "shifted" residuals) to a change in initial position.

Instead, the Office contended that *Martikka* teaches the claimed elements directed to forming Doppler residuals as a function of the Doppler measurements determined for each of the plurality of satellites ("measured-Doppler measurements") and Doppler measurements predicted using at least the initial position ("predicted-Doppler measurements"). The Office also contended that *Martikka* teaches the claimed elements directed to relating these Doppler residuals (i.e., those formed as a function of the measured-Doppler and predicted-Doppler measurements) to a change in the initial position. Yet in support of this contention, the Office cited to *Martikka* at Figures 1 and 2 and column 2, lines 34-48 and 58-64, which discloses only Doppler shifts.

More specifically, *Martikka* at column 2, lines 34-48, states "measuring means for measuring the Doppler shifts of said signals, calculating means for calculating

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preliminary positional coordinates of said receiver based on the locations of the satellites, the speeds of the satellites and the measured Doppler shifts of said signals" (emphasis added). *Martikka* at column 2, lines 58-64, states "The receiver can estimate the position of a satellite as the orbit of the satellite is known by using its own internal clock. The estimated position is not exactly correct due to the error of the internal clock. However, the preliminary position obtained in the above described manner is accurate enough to detect if there is a significant error in a pseudo-distance calculated between the receiver and a satellite. Thus an error caused by the fact that the receiver has locked to a wrong C/A-code can be detected, and the error in the pseudo-distance can be corrected" (emphasis added).

In contrast, the Applicants claim a method and apparatus that includes a combination of elements directed to *(i) forming Doppler residuals as a function of the measured-Doppler and predicted-Doppler measurements, and (ii) relating such Doppler residuals to a change in the initial position*. Specifically, the Applicants claim 1 positively recites:

"A method of locating position of a satellite signal receiver, comprising:
determining a Doppler measurement for each of a plurality of satellite signals relative to the satellite signal receiver at a first time;
computing an initial position of the satellite signal receiver using the Doppler measurement for each of the plurality of satellite signals;
forming Doppler residuals using the initial position and the Doppler measurements for each of the plurality of satellite signals;
relating the Doppler residuals to a change in the initial position; and
computing an update of the initial position" (emphasis added).

Contrary to the Office's contentions, the Applicants submit that the above-listed sections (and the rest) of *Martikka* do not disclose the claimed elements directed to Doppler residuals, whatsoever, and thus, do not describe any process or function related to and/or associated with the Doppler residuals. That is, *Martikka* does not disclose, for example, the claimed elements directed to *(i) forming Doppler residuals as a function of the measured-Doppler and predicted-Doppler measurements, and (ii) relating such Doppler residuals to a change in the initial position*. See, the present specification at, for example, page 15, para. [0049], and at pages 6-19 starting at para. [0025].

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The Applicants note that *Martikka* merely discloses the well known process of measuring Doppler shifts from the satellite signals, using these Doppler shifts to calculate the speeds of the satellites, and using the speeds of the satellites to calculate preliminary positional coordinates. See *Martikka* at col. 2, lines 14-18, 34-39, col. 3, lines 45-47, and col. 5, lines 36-39. The Applicants submit, however, that *Martikka* is totally devoid of any explicit or inherent disclosure of using its Doppler shifts to (ii) form *Doppler residuals as a function of the measured-Doppler and predicted-Doppler measurements, and (ii) relating such Doppler residuals to a change in the initial position*. Instead, *Martikka* merely discloses that its "preliminary positional coordinates" are calculated using Doppler shifts.

Since *Martikka* lacks at least one element of each of the independent claims 1 and 11, the Applicants submit that *Martikka* does not anticipate the claimed invention under 35 U.S.C. §102(e). As such, the Applicants submit that each of the independent claims 1 and 11 are patentable over *Martikka*.

Claims 2 and 3 depend, either directly or indirectly, from independent claim 1. Since the Applicants submit that *Martikka* fails to anticipate the independent claim 1 for the reasons set forth above, the Applicants further submit that *Martikka* likewise fails to anticipate each of the dependent claims 2 and 3. Thus, the Applicants submit that the claims 1-3 fully satisfy the requirements of 35 U.S.C. §102, and therefore, are allowable.

B. Response to §103(a) Rejection of Dependent Claims 4 and 9

The Office rejected dependent claims 4 and 9 under 35 U.S.C. § 103(a) as unpatentable over *Martikka* in view of U.S. Patent Application Publication 2004/0203865 filed by Krasner ("Krasner"). The Applicants respectfully traverse this rejection.

The Office stated that *Martikka* in combination with *Krasner* teaches all of the elements of the dependent claims 4 and 9. The Applicants note that the Office cited *Martikka* for the proposition that it teaches all of the elements of independent claim 1 from which the dependent claims 4 and 9 ultimately depend. The Applicants also note that the Office only cited *Krasner* with respect to the subject matter claimed in the dependent claims 4 and 9.

The Applicants also note that the Office did not rely on *Krasner* to (and further submit that *Krasner* does not) teach the combination of elements directed to (i)

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forming Doppler residuals using the initial position and the Doppler measurements for each of the plurality of satellite signals, and (ii) relating such Doppler residuals to a change in initial position, as noted above. The Applicants further submit, as discussed above, that *Martikka* does not teach or suggest teach the combination of elements directed to the Doppler residuals. As such, the Applicants submit that the combination of *Martikka* and *Krasner* does not teach or suggest all the elements of the independent claim 1.

Given that each of the dependent claims 4 and 9 depend, directly or indirectly, from the independent claim 1, each necessarily includes all the elements of independent claim 1. Since the combination of *Martikka* and *Krasner* does not teach the limitations of the independent claim 1, the Applicants therefore submit that each of the dependent claims 4 and 9 is not obvious under 35 U.S.C. §103(a) over *Martikka* in view of *Krasner*.

C. Response to §103(a) Rejection of Claim 10

The Office rejected dependent claims 4 and 9 under 35 U.S.C. § 103(a) as unpatentable over *Martikka* in view of U.S. U.S. Patent No. 6,181,275 granted to Chenebault et al. ("Chenebault"). The Applicants respectfully traverse this rejection.

The Office stated that *Martikka* in combination with *Chenebault* teaches all of the elements of the dependent claim 10. The Applicants note that the Office cited *Martikka* for the proposition that it teaches all of the elements of independent claim 1 from which the dependent claim 10 ultimately depends. The Applicants also note that the Office only cited *Chenebault* with respect to the subject matter claimed in the dependent claim 10.

The Applicants also note that the Office did not rely on *Chenebault* to (and further submit that *Chenebault* does not) teach the combination of elements directed to (i) forming Doppler residuals using the initial position and the Doppler measurements for each of the plurality of satellite signals, and (ii) relating such Doppler residuals to a change in initial position, as noted above. The Applicants further submit, as discussed above, that *Martikka* does not teach or suggest teach the combination of elements directed to the Doppler residuals. As such, the Applicants submit that the combination of *Martikka* and *Chenebault* does not teach or suggest all the elements of the independent claim 1.

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Given that the dependent claim 10 depends, directly or indirectly, from the independent claim 1, it necessarily includes all the elements of independent claim 1. Since the combination of *Martikka* and *Chenebault* does not teach the limitations of the independent claim 1, the Applicants therefore submit that the dependent claim 10 is not obvious under 35 U.S.C. §103(a) over *Martikka* in view of *Chenebault*.

D. Response to §103(a) Rejection of Claims 11-14, 19-21 and 23-24

The Office rejected claims 11-14, 19-21 and 23-24 under 35 U.S.C. § 103(a) as unpatentable over *Martikka* in view of in view of U.S. Patent No. 6,597,311 granted to Sheynblat et al. ("Sheynblat"). The Applicants respectfully traverse this rejection.

The Office stated that *Martikka* in combination with *Sheynblat* teaches all of the elements of the claims 11-14, 19-21 and 23-24. Claim 11, which is in independent form and from which claims 12-14, 19-21 and 23-24 ultimately depend, includes a combination of claimed elements (like claim 1) directed to (i) forming Doppler residuals using the initial position and the at least one Doppler measurement, and (ii) relating such Doppler residuals to a change in initial position, as noted above.

The Applicants note that the Office cited *Martikka* for the proposition that it teaches all of the elements of independent claim 11 (like claim 1) from which the dependent claims 12-14, 19-21 and 23-24 ultimately depend. The Applicants also note that the Office only cited *Sheynblat* with respect to the subject matter claimed in the dependent claims 12-14, 19-21 and 23-24.

The Applicants also note that the Office did not rely on *Sheynblat* to (and further submit that *Sheynblat* does not) teach the combination of elements directed to (i) forming Doppler residuals using the initial position and the Doppler measurements for each of the plurality of satellite signals, and (ii) relating such Doppler residuals to a change in initial position, as noted above. The Applicants further submit, as discussed above with respect to independent claim 1, that *Martikka* does not teach or suggest teach the combination of elements directed to the Doppler residuals. As such, the Applicants submit that the combination of *Martikka* and *Sheynblat* does not teach or suggest all the elements of the independent claim 1.

Given that each of the dependent claims 12-14, 19-21 and 23-24 depend, directly or indirectly, from the independent claim 1, each necessarily includes all the

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elements of independent claim 11. Since the combination of *Martikka* and *Sheynblat* does not teach the limitations of the independent claim 11, the Applicants therefore submit that each of the dependent claims 12-14, 19-21 and 23-24 is not obvious under 35 U.S.C. §103(a) over *Martikka* in view of *Sheynblat*.

E. Response to §103(a) Rejection of Claim 22

The Office rejected claim 22 under 35 U.S.C. § 103(a) as unpatentable over *Martikka* in view of *Sheynblat* and in further view of *Krasner*. The Applicants respectfully traverse this rejection.

The Office stated that *Martikka* in combination with *Sheynblat* and *Krasner* teaches all of the elements of the dependent claim 22. The Applicants note that the Office cited *Martikka* for the proposition that it teaches all of the elements of independent claim 11 from which the dependent claim 22 ultimately depends. The Applicants also note that the Office only cited *Sheynblat* and *Krasner* with respect to the subject matter claimed in the dependent claim 22.

The Applicants also note that the Office did not rely on *Martikka* to (and further submit that *Martikka* does not) teach the combination of elements directed to (i) forming Doppler residuals using the initial position and the Doppler measurements for each of the plurality of satellite signals, and (ii) relating such Doppler residuals to a change in initial position, as noted above. The Applicants further submit, as discussed above, that *Martikka* does not teach or suggest teach the combination of elements directed to the Doppler residuals. As such, the Applicants submit that the combination of *Martikka*, *Sheynblat* and *Krasner* does not teach or suggest all the elements of the independent claim 11.

Given that the dependent claim 22 depends, directly or indirectly, from the independent claim 11, it necessarily includes all the elements of independent claim 1. Since the combination of *Martikka*, *Sheynblat* and *Krasner* does not teach the limitations of the independent claim 11, the Applicants therefore submit that the dependent claim 22 is not obvious under 35 U.S.C. §103(a) over *Martikka* in view of *Sheynblat* and in further view of *Krasner*.

CONCLUSION

In view of the foregoing, the Applicants submit that none of the claims presently in the application are anticipated under the provisions of 35 U.S.C. § 102
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or obvious under the provisions of 35 U.S.C. §103. Consequently, the Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Office believes that any unresolved issues still exist or if, in the opinion of the Office, a telephone conference would expedite passing the present application to issue, the Office is invited to call the undersigned attorney directly at 732-978-4899 or the office of the undersigned attorney at 732-978-7100 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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